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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,509	12/05/2005	David Anderson	9563-11	5246
20792 7590 03/23/2009 MYERS BIGEL SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627			EXAMINER ELBIN, JESSE A	
			ART UNIT 2614	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,509	Applicant(s) ANDERSON, DAVID	
	Examiner JESSE A. ELBIN	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-10, 13, 14 and 16-24 is/are pending in the application.
- 4a) Of the above claim(s) 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, 13, 14, 16-21, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed January 5, 2009 has been entered as a result of the RCE filed January 27, 2009.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7-10, 13, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Woodard (US Patent 4,862,507 ('507)) (already of record).

Regarding claim 1, Woodard teaches a microphone unit ('507 title) for mobile equipment, comprising: a microphone pick up (microphone head; '507 Fig. 4 #14) located within a microphone pick up housing (front and rear supports; Fig. 4 #17 and #18) forming a chamber (central cavity; '507 Fig. 4 #25), wherein said microphone pick up housing defines a cylinder (Fig. 4) extending in a longitudinal direction along an axis of the cylinder (principal axis; Fig. 4 #15) wherein the microphone pick up housing has a shielding surface (*defined by* Figs. 5-6 ##30, 32, 34, 36, 38, and 40) and a side surface (*defined by* Figs. 5-6 #42) wherein the side surface is perpendicular with respect to the longitudinal direction (Fig. 5-6), wherein said microphone pick up housing is provided with three sound passage openings ('507 Figs. 5-6 *illustrate a total of 7 openings, 6 on*

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the "shielding surface" i.e. between "ribs" ##32, 34, 36, 38, and 40, 1 on the "side surface" in the center of #42) configured to receive sound from a sound field external to said chamber, said sound passage openings being provided with at least one wind noise reduction element each (foam cover; Figs. 1, 4 #12 is illustrated completely encompassing front support 17) wherein at least one of said sound passage openings comprises a hole in said shielding surface ('507 Figs. 5-6 illustrate 6 openings on the "shielding surface"), wherein the hole has a length extending in the longitudinal direction (principal axis) that is greater than a width of the hole in a direction orthogonal with respect to the longitudinal direction ('507 Fig. 5 illustrates openings between the ribs which extend in the direction defined by the principal axis 15, wherein the longitudinal direction is illustrated as being longer than the direction orthogonal to the longitudinal direction) wherein the three sound passage openings (between "spaced ribs 30, 32, 34, 36, 38, and 40"; Fig. 5-6 and col. 4 line 43) are aligned in the longitudinal direction (Fig. 4 #15), and wherein the microphone pickup (Fig. 4 #14) is surrounded by the three sound passage openings (Fig. 5 illustrates the openings extending to the "tube 44" (col. 4 line 46), wherein Fig. 4 illustrates "circumferential openings 50" (col. 3 lines 64-66) of the microphone pickup extending beyond the "tube 44...[including] a lip 46" (col. 4 line 46), such that the "microphone pickup is surrounded by the three sound passage openings").

Regarding claim 7, Woodard remains as applied above.

Woodard further teaches at least one of said sound passage openings comprises a hole in said side surface ('507 Fig. 6 *illustrates a hole in the "side surface" defined by "ring 42"*).

Regarding claim 8, Woodard remains as applied above.

Woodard further teaches the three sound passage openings are provided in the shielding surface of the microphone pick up housing ('507 Figs. 5-6 *illustrate 6 openings on the "shielding surface"*).

Regarding claim 9, Woodard remains as applied above.

Woodard further teaches a fourth sound passage opening is provided in the side surface of the microphone pick up housing ('507 Figs. 5-6 *illustrate an additional opening on the "side surface" defined by "ring 42"*).

Regarding claim 10, Woodard teaches a microphone ('507 title) for a mobile electronic device, the microphone comprising: a microphone pick up housing (front and rear supports; Fig. 4 #17 and #18) having a cylindrical shielding surface (*defined by* Fig. 5 ##30, 32, 34, 36, 38, and 40) defining cylindrical chamber (*including* central cavity; '507 Fig. 4 #25) wherein the cylindrical shielding surface has at least three elongated holes therethrough ('507 Figs. 5-6 *illustrate a total of 6 "elongated holes" between ribs ##30, 32, 34, 36, 38, 40*), wherein a length of each of the elongated holes in a longitudinal direction of the cylindrical chamber is greater than a width thereof in a

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direction orthogonal with respect to the longitudinal direction ('507 Fig. 5 *illustrates openings between the ribs which extend in the direction defined by the principal axis 15, wherein the longitudinal direction is illustrated as being longer than the direction orthogonal to the longitudinal direction*) wherein the at least three elongated holes (between ribs; Figs. 5-6 e.g. ##30, 32, 34, 36, 38, 40) are aligned in the longitudinal direction (Fig. 4 #15); a microphone pick up (microphone head; '507 Fig. 4 #14) located in the cylindrical chamber defined by the microphone pick up housing ('507 Fig. 4 *illustrates microphone head 14 within the cylindrical housing defined by front and rear supports #17 and #18 respectively*) wherein the microphone pick up (Fig. 4 #14) is surrounded by the at least three elongated holes (Fig. 5 *illustrates the holes extending to the "tube 44"* (col. 4 line 46), *wherein Fig. 4 illustrates "circumferential openings 50"* (col. 3 lines 64-66) *of the microphone pickup extending beyond the "tube 44...[including] a lip 46"* (col. 4 line 46), *such that the "microphone pickup is surrounded by the at least three elongated holes"*); and a noise reduction element covering the elongated holes (foam cover; Figs. 1, 4 #12 *is illustrated completely encompassing front support 17 and all "elongated holes"*).

Regarding claim 13, Woodard remains as applied above.

Woodard further teaches the microphone pick up housing (front and rear supports; Fig. 4 #17 and #18) has an end surface (*defined by Fig. 6 #42*) that is perpendicular ('507 Figs. 5-6) with respect to the longitudinal direction (principal axis; Fig. 4 #15) and wherein the end surface has an end sound passage opening

therethrough ('507 Figs. 5-6 *illustrate an opening on the "end surface" defined by ring #42*).

Regarding claim 16, Woodard remains as applied above.

Woodard further teaches the noise reduction element comprising a noise reduction element on each of the at least three elongated holes (foam cover; Figs. 1, 4 *#12 is illustrated completely encompassing front support 17 and all "elongated holes"*).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 4, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard (US Patent 4,862,507 ('507)) (already of record) as applied to claims 1 and 10 above, and further in view of Patel et al. (US Patent 5,442,713 ('713)) (already of record).

Regarding claim 2, Woodard remains as applied above.

Woodard does not explicitly teach said wind noise reduction element comprising a mesh having one layer.

In the same field of endeavor, Patel a wind noise reduction element (porous member; '713 Fig. 2 #20) comprising a mesh having one layer (is a stainless steel mesh; '713 col. 2 lines 23-24) for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a mesh as taught by Patel as the wind noise reduction element, as taught by Woodard, for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

Regarding claim 4, the combination of Woodard and Patel remains as applied above.

See rejection of claim 2 above, where Patel teaches the mesh being stainless steel ('713 col. 2 lines 23-24).

Regarding claim 17, Woodard remains as applied above.

Woodard does not explicitly teach the noise reduction element comprising a mesh.

In the same field of endeavor, Patel a wind noise reduction element (porous member; '713 Fig. 2 #20) comprising a mesh (is a stainless steel mesh; '713 col. 2 lines 23-24) for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a mesh as taught by Patel as the wind noise reduction element, as taught by Woodard, for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

Regarding claim 18, the combination of Woodard and Patel remains as applied above.

See rejection of claim 17 above, where Patel teaches the mesh is a metal mesh (stainless steel mesh; '713 col. 2 lines 23-24).

6. Claims 3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard (US Patent 4,862,507 ('507)) (already of record) as applied to claims 1 and 10 above, and further in view of Drever (US Patent 4,600,077 ('077)) (already of record).

Regarding claim 3, Woodard remains as applied above.

Woodard does not explicitly teach said wind noise reduction element comprising a mesh having a plurality of layers.

In the same field of endeavor, Drever teaches wind noise reduction element (a laminate structure acting as a wind interfering medium; '077 col. 3 lines 34-35) comprising a mesh (layers of nylon; '077 col. 3 lines 24-25) having a plurality of layers

(in a multilayer laminate; '077 col. 3 lines 22-23) for the benefit of further limiting the effects of wind on the microphone.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the porous membrane as taught by Woodard to use a multilayer laminate material as taught by Drever for the benefit of further limiting the effects of wind on the microphone.

Regarding claim 20, Woodard remains as applied above.

Woodard does not explicitly teach the wind noise reduction element comprising a mesh having a plurality of layers.

In the same field of endeavor, Drever teaches wind noise reduction element (a laminate structure acting as a wind interfering medium; '077 col. 3 lines 34-35) comprising a mesh (layers of nylon; '077 col. 3 lines 24-25) having a plurality of layers (in a multilayer laminate; '077 col. 3 lines 22-23) for the benefit of further limiting the effects of wind on the microphone.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the porous membrane as taught by Woodard to use a multilayer laminate material as taught by Drever for the benefit of further limiting the effects of wind on the microphone.

7. Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard (US Patent 4,862,507 ('507)) (already of record) in view of Patel et al. (US

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Patent 5,442,713 ('713)) (already of record) as applied to claims 2 and 17, in view of Drever (US Patent 4,600,077 ('077)).

Regarding claim 5, the combination of Woodard and Patel remains as applied above.

Neither Woodard nor Patel explicitly teaches the mesh being made of polymer material such as nylon.

In the same field of endeavor, Drever teaches a mesh being made of polymer material such as nylon (layers of nylon; '077 col. 3 lines 24-25) for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a nylon mesh as taught by Drever in the wind noise reduction element, as taught by the combination of Woodard and Patel, for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

Regarding claim 19, the combination of Woodard and Patel remains as applied above.

Neither Woodard nor Patel explicitly teaches the mesh comprising a nylon mesh.

In the same field of endeavor, Drever teaches a mesh comprising a nylon mesh (layers of nylon; '077 col. 3 lines 24-25) for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a nylon mesh as taught by Drever in the wind noise reduction element, as taught by the combination of Woodard and Patel, for the benefit of being able to adjust the pitch of the mesh to adjust the element's ability to reduce wind noise.

8. Claims 14, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard (US Patent 4,862,507 ('507)) (already of record) as applied to claim 13 above.

Regarding claim 14, Woodard remains as applied above.

Woodard does not explicitly teach a second noise reduction element covering the end sound passage opening therethrough,

Woodard does teach the foam cover (Figs. 1, 4 #12) completely encompassing front support 17 and all openings. Specifically, Fig. 4 illustrates the opening in the "end surface" being covered by the foam cover #12. One of ordinary skill in the art would recognize that a single foam cover encompassing all holes; or a separate foam cover for each opening would not alter the functionality of the design, and is a structural equivalent.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the foam cover taught by Woodard to be two separate pieces based on the requirements of the design, without altering the functionality of the device.

Regarding claim 21 (dependent upon claim 10), Woodard remains as applied above.

Woodard further teaches the microphone pick up comprises a directional (“acoustical polar pattern of a microphone from cardioid...”; abstract) microphone pick up (Fig. 4 #14) that is surrounded by the at least three elongated holes (*as stated in the rejection of claim 10 above*).

While Woodard does not explicitly teach the directional microphone being a “condenser type”, Examiner takes official notice that use of a “condenser type” microphone is well known in the art. Condenser type microphones have been in common use since the middle of the 20th century, and the pros and cons of using a condenser type microphone are well established. Condenser microphones typically have a higher SNR; however require more support circuitry and are more costly. Based on the requirements of the design, it is well within the skill level of one of ordinary skill in the art to use a common condenser type microphone as the microphone pickup taught by Woodard.

Regarding claim 23 (dependent upon claim 1), Woodard remains as applied above.

Woodard further teaches the microphone pick up comprises a directional (“acoustical polar pattern of a microphone from cardioid...”; abstract) microphone pick up (Fig. 4 #14) that is surrounded by the at least three elongated holes (*as stated in the rejection of claim 10 above*).

While Woodard does not explicitly teach the directional microphone being a “condenser type”, Examiner takes official notice that use of a “condenser type” microphone is well known in the art. Condenser type microphones have been in common use since the middle of the 20th century, and the pros and cons of using a condenser type microphone are well established. Condenser microphones typically have a higher SNR; however require more support circuitry and are more costly. Based on the requirements of the design, it is well within the skill level of one of ordinary skill in the art to use a common condenser type microphone as the microphone pickup taught by Woodard.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard (US Patent 4,862,507 ('507)) (already of record), in view of applicant's admitted prior art.

Regarding claim 24, Woodard teaches a microphone ('507 title) comprising: a microphone pick up housing (front and rear supports; Fig. 4 #17 and #18) having a cylindrical shielding surface (*defined by* Fig. 5 ##30, 32, 34, 36, 38, and 40) defining cylindrical chamber (*including* central cavity; '507 Fig. 4 #25) therein wherein the cylindrical shielding surface has at least three elongated holes therethrough ('507 Figs. 5-6 *illustrate a total of 6 “elongated holes” between ribs ##30, 32, 34, 36, 38, 40*), wherein a length of each of the elongated holes in a longitudinal direction of the cylindrical chamber is greater than a width thereof in a direction orthogonal with respect

to the longitudinal direction ('507 Fig. 5 *illustrates openings between the ribs which extend in the direction defined by the principal axis 15, wherein the longitudinal direction is illustrated as being longer than the direction orthogonal to the longitudinal direction*) wherein the at least three elongated holes (between ribs; Figs. 5-6 e.g. ##30, 32, 34, 36, 38, 40) are aligned in the longitudinal direction (Fig. 4 #15); a microphone pick up (microphone head; '507 Fig. 4 #14) located in the cylindrical chamber defined by the microphone pick up housing ('507 Fig. 4 *illustrates microphone head 14 within the cylindrical housing defined by front and rear supports #17 and #18 respectively*) wherein the microphone pick up (Fig. 4 #14) is surrounded by the at least three elongated holes (Fig. 5 *illustrates the holes extending to the "tube 44" (col. 4 line 46), wherein Fig. 4 illustrates "circumferential openings 50" (col. 3 lines 64-66) of the microphone pickup extending beyond the "tube 44...[including] a lip 46" (col. 4 line 46), such that the "microphone pickup is surrounded by the at least three elongated holes"*); and a noise reduction element covering the elongated holes (foam cover; Figs. 1, 4 #12 *is illustrated completely encompassing front support 17 and all "elongated holes"*).

While Woodard does not explicitly teach the microphone being for a cellular phone comprising a front panel; a mouthpiece provided in the front panel; and a directional microphone unit adjacent the mouthpiece; applicant admits these limitations are "well known for a person skilled in the art of portable electronic devices (page 4, lines 17-20). Woodard does not teach a specific use, size, or implementation of the invention, rather Woodard teaches the principles of a "microphone acoustical polar pattern converter" ('507 title), wherein one of ordinary skill in the art could use the

principles of matching the “internal difference of delay” with “the external delay” (‘507 col. 2 lines 18-20) at any specific size, to obtain a directional characteristic required by the design specifications.

It would have been obvious to one of ordinary skill in the art of portable electronic devices, at the time of the invention, to use the directional microphone as taught by Woodard in a cellular phone, as Applicant admits is well known in the art, for the obvious benefit of customizing the polar pattern of the microphone as is required by the design specifications.

Allowable Subject Matter

10. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant argues that “Woodard fails to disclose that a microphone pickup is surrounded by the elongated holes...Because the microphone element of Woodard is included in head 14...the microphone element of Woodard is not surrounded by openings of front support 17” (p. 9 end to p. 10, line 4). Examiner respectfully disagrees with this argument, as the microphone pick up consists of the entirety of “head 14” taught by Woodard. Woodard teaches that “The [microphone] head includes internally and axially directed microphone element” (col. 3 lines 61-63) wherein the two elements

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are used to create an initial “cardioid polar pattern”. Further, as described in the art rejection above, there is, an overlap between the “spaced ribs” (Figs. 5-6) and the “head 14”, such that the elongated holes surround the “head 14”. Based on the standard definition of “surround” (“II. 2. a. To enclose, encompass, or beset on all sides; **to stand, lie, or be situated around**; also, to form the entourage of; often pass. const. with or by = to have on all sides or all round.” From OED second edition (emphasis added)). As stated in the art rejection above, Examiner maintains that the “spaced ribs” ‘surround’ the “head 14”, inasmuch as the “microphone pick up (#2) is surrounded by the at least three elongated holes (#5a)” as taught by the Applicant.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Akino (US Patent 4,789,044) teaches a narrow directional microphone.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE A. ELBIN whose telephone number is (571)270-3710. The examiner can normally be reached on Monday through Friday, 9:00am to 6:00pm EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. E./

Examiner, Art Unit 2614

/CURTIS KUNTZ/

Supervisory Patent Examiner, Art Unit 2614